

Unit Planning Guide: Grade 5 Unit 8 of 9

Unit Title: Volume of Rectangular Prisms	Pacing (Duration of Unit): 2 Weeks
Grade: 5	Buffer Day(s): 1 week

Desired Results

Transfer Goals (Priority practice standards in **bold**)

Students will be able to independently use their learning to:

- MP.1. **Make sense of problems and persevere in solving them.**
- MP.2. **Reason abstractly and quantitatively.**
- MP.3. Construct viable arguments and critique the reasoning of others.
- MP.4. **Model with mathematics.**
- MP.5. Use appropriate tools strategically.
- MP.6. **Attend to precision.**
- MP.7. Look for and make use of structure.
- MP.8. Look for and express regularity in repeated reasoning.

Established Goals (2011 MA Curriculum Frameworks Standards Incorporating the Common Core State Standards)

Prerequisite Standards:

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Standards (Priority Standards in **bold**):

- 5.MD.3: Recognize volume as an attribute of solid figures and understand concepts of volume measurement.
 - 5.G.3a: A cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume, and can be used to measure volume.
 - 5.G.3: A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.
- **5.MD.4. Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.**

WIDA for English Language Learners

Standard 1: ELLs **communicate** for **Social** and **Instructional** purposes within the school setting
 Standard 3: ELLs **communicate** information, ideas and concepts necessary for academic success in the content area of **Mathematics**

In the lesson planning stage, teachers will need to differentiate lessons for ELLs. In order to accomplish this they will need: 1.) this curriculum map, 2.) a list of their ELLs and their proficiency levels, and 3.) appropriate language

<ul style="list-style-type: none"> 5.MD.5: Relate volume to the operations of multiplication and addition and solve real-world and mathematical problems involving volume. <ul style="list-style-type: none"> 5. MD.5a: Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication. 5. MD.5b: Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real-world and mathematical problems. 5. MD.5c: Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real-world problems. 	function expectations and scaffolds or supports.

Meaning (*Mostly assessed through Performance Tasks/Assessments)
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Big Ideas: <ul style="list-style-type: none"> Volume is represented in cubic units The volume refers to the space taken up by a solid object Multiplication is the most efficient method to calculate volume 	Essential Questions: (Questions which frame ongoing and important inquiries about the big ideas. They are written for students and used in daily instruction to help engage students in meaningful thinking.) <ul style="list-style-type: none"> What kind of real life situations or problems require knowledge of volume? How are volume and area related? Why is volume represented with cubic units?
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Acquisition (*Mostly assessed through traditional summative assessments)
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<p>Knowledge: Key basic concepts, facts, and key terms (written in phrases) students should be able to recall independently.</p> <p><i>Students will know...</i></p> <ul style="list-style-type: none"> • That a cube with a length of 1 unit has “one cubic unit of volume” • Volume is the amount of space taken up by a solid object <p>Key Academic Vocabulary:</p> <ul style="list-style-type: none"> • Dimensions (length, width, height, base) • Rectangular Prism • Faces • Cubic Units • Volume 	<p>Skills: The discrete skills and process students should be able to use independently</p> <p><i>Students will be skilled at:</i></p> <ul style="list-style-type: none"> • Using the volume formula ($l \times w \times h$ or $b \times h$) to find the volume of rectangular prisms. (Applying) • Calculating the combined volume of two-non overlapping right rectangular prisms. (Applying) • Counting cubes in solid figures to determine volume. (Applying) • Showing the relationship between counting cubes and the formula for volume. (Analyzing) • Solving real-world problems involving volume. (Evaluating)
<p>Resource Suggestions:</p>	